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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/696,526	10/23/2000	Ji Su	160398-1	4894

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EXAMINER	
ADDISON, KAREN B	
ART UNIT	**PAPER NUMBER**
2834	

DATE MAILED: 10/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/696,526	SU ET AL.	
	Examiner	Art Unit	
	Karen B Addison	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 June 2004* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10,16,18 and 19* is/are allowed.

6)☒ Claim(s) *1-9,11-15-17,20-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 January 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5-9, 1 1-14, 17, 20-23, 25-27, and 30-33 are rejected under 35 3. U.S.C. 102(b) as being anticipated by Micheron (4400634).

With respect to claims 1 and 21-22, the reference discloses in fig.1- 3 an electroactive device comprising two layers (1,2) of material wherein one layer is an electroactive material and wherein at least one layer is of non-uniform thickness (2). The reference discloses the use of a conductive epoxy (glue). With respect to claim 2, 3, and With respect to claim 5, it is an inherent property of electroactive devices that the 14, the reference discloses electrical signal (6). amplitude controls the range of motion.

With respect to claims 6-8, the non-uniform thickness layer inherently has these properties. With respect to claims 9 and 17, fig. 3 discloses that the non-uniform thickness is function of length. With respect to claim 11, the reference discloses two electroactive layers in fig. 1-3. With respect to claims 12 and 13, the reference discloses the use of a conductive epoxy. With respect to claim 20, no structural limitations are added in this claim. With respect to claims 23, 25-27, and 30-33, the reference

discloses that the electroactive device is used for loudspeaker as disclosed in (see abstract).

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4, 15, 24, 28, 29, and 34-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Micheron in view of Pelrine.

With respect to claim 4, the reference discloses in fig. 3 an electroactive device comprising two layers(1,2) of material with layer 2 of non-uniform thickness bonded together by polymer epoxy glue. The reference does not disclose polymer electrodes. Pelrine et al disclose polymer electrodes in the last full paragraph on page 240 for the purpose of providing compliant electrical connections. It would have been obvious to one of ordinary skill in the art to use the polymer electrodes of Pelrine et al in the device of Schafft for the purpose of providing compliant electrical connections. With respect to claim 15, the reference does what type of material is being used. The Examiner takes Official Notice that polymers, ceramics, and composites would have been well known.The court has found that the selection of a known material based on its suitability for its intended use is obvious. In re Leshin, 227 F.2d 197, 125 USPQ 416 (CCPA 1960). Sinclair & Carroll Co. Interchemical Corp., 325 U.S. 327, 65 USPQ 297 (1945). It would have been obvious to one of ordinary skill in the art to use polymers, ceramics,

and composites for the purpose of utilizing their well-documented properties. With respect to claims 24, 28, and 29, the reference only discloses the device for use in a speaker. The Examiner takes Official Notice that reflectors and display panels would have been well known. The reference does indicate that the non-uniform thickness makes the electroactive device stronger. It would have been obvious to one of ordinary skill in the art to use the device of Schafft in a reflector or a display panel for purpose of providing an actuator with increased strength. With respect to claims 34 and 35, the reference does not disclose the same scale.

The reference does indicate that the non-uniform thickness makes the electroactive device stronger. In Gardner v. TEC Systems, Inc., 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), ced. denied, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior ad and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. It would have been obvious to one of ordinary skill in the art to scale down the device of fig. 3 of Schafft for the purpose of providing micro and nano-scale device with improved strength.

Allowable Subject Matter

3. Claims 10,16,18,and 19 are allowed.

Response to Arguments

4. Applicant's arguments filed 6/24/04 have been fully considered but they are not persuasive.

In response to the applicant's arguments that Micheron fails to disclose two electroactive layers is noted.

However, Micheron clearly disclose in the abstract, that the bimorph structure, deformation is controlled in a linear manner by a voltage.

In response to the applicant argument that Micheron fails to discloses two electoactive layers wherein, one layer is of non- uniform thickness is noted.

However, Micheron clearly shows in fig.1 two electroactive polymer wherein, one layer (2) is of non-uniform thickness.

5. In response to the applicant's argument, that thickness of the electroactive polymer is a function of width or length is noted. However, the applicant claims does not include that the thickness of the layer is a function of the width or length. It is the claims that define the claim invention, and it is the claim, not the specifications that are anticipated or unpatentable.

6. In response to applicant's argument, that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992).

Conclusion

7. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen B Addison whose telephone number is 571-272-2017. The examiner can normally be reached on 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 703-308-1317. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Thomas M. Dougherty
THOMAS M. DOUGHERTY
PRIMARY EXAMINER
GROUP 2834